REMARKS

Reconsideration of this application is requested.

Independent claim 1 is rejected under 35 U.S.C 102(b) as being anticipated by Loeb (US. 1,753,897), and is rejected under 35 USC 102(e) as being anticipated by Young et al. (US. 6,162,046). Dependent claim 7 is rejected under 35 USC 102(e) as being anticipated by Young et al. (US. 6,162,046).

With regards to Loeb, **cotton pad** *o* (FIG. 1) is used only to **absorb** fuel. Additionally, the fuel is evaporated **first** in the fuel chamber *r*, and the evaporated fuel is then passed to the combustion chamber *s* via a **screen** *c* separating the fuel chamber from the combustion chamber.

In contrast, the present invention, according to dependent claim 7, includes an **evaporative membrane pad** with patterned holes designed to control the evaporation process. Specifically, the evaporative membrane pad is **not** used for absorbing fuel but has **patterned holes and grooves** to explicitly control the fluid reactant ratios during the evaporation process. Furthermore, the high surface adhesion between the fluid reactants and the evaporative pad prevent any pressurization of fluids back into the fuel chamber, as well as any back pressure due to gravitational effects (specification, page 11 paragraph [0049]). Additionally, the fluid reactant is **directly** evaporated into the combustion chamber, by the evaporative membrane pad, so as to be ignited by the micro-initiator 15 (FIG. 2) or auto-ignited due to the resonance characteristics of the chamber. Furthermore, there is **no separation screen** for separating the fuel chamber from the combustion chamber. Accordingly, independent claim 1 is now amended to include the feature of original dependent claim 7.

With regards to Young, shown clearly, in FIG. 3 of Young, is a **pressurization module** 60 including porous member 62, vapor impermeable shroud 64, and substantially vapor impermeable plate 66 (FIG. 3 and col. 14, lines 8-12) for facilitating pressurization of reactants (col. 9, lines 60-67). In essence, the purpose of Young's apparatus is to pressurize the fuel vapor for supplying fuel to downstream devices, (e.g., the combustion chamber, and for "entraining"

air). Thus, the pressurization module is equivalent to having a **pressurized chemical line** or pump found in macro-scale engines for subsequent steps of inducing vapor mixing. In contrast, in the present invention, and according to claim 1, the fluid reactants are supplied through a **non-pressurized inlet** (see also present specification page 9, paragraph [0043] and page 11, paragraph [0049]).

Furthermore, the system in Young includes a porous member 62 for assisting evaporation of fuel and a hot seat assembly 72 for channeling the vapor fuels. The design of the porous member is such that the system of Young requires substantial **external power** in the form of heat (col. 11, lines 36-42). In contrast, the device of the present system includes a structure that is **not** a porous member, and hence precludes the need for an **external heat source**, thus increasing fuel conversion (liquid to gaseous) efficiency. In an exemplary aspect, the structure includes specifically designed patterned holes and grooves to increase surface adhesion, in a predetermined manner, thereby permitting evaporation without the need for an external power source. Accordingly, claim 1 has been further amended to include the aspect of using non-porous materials for the evaporator.

Accordingly, it is requested that the rejection of amended independent claim 1 and dependent claims 2-26 be withdrawn. New claims 27-35 are added to further distinguish the present invention. It is submitted that claims 1-35 are now allowable.

Any additional fees required in connection with this communication which are not specifically provided for herewith are authorized to be charged to the Deposit Account No. 50-2638 in the name of Greenberg Traurig, LLP. Any overpayments are also authorized to be credited to this account. Any extensions of time that are necessary for this paper, or any extensions of time that will be required for papers to be submitted in this case in the future, are hereby generally requested.

In view of the above, it is submitted that this application is now in good order for allowance, and such early action is respectfully solicited. Should matters remain which the

Examiner believes could be resolved in a telephone interview, the Examiner is requested to telephone the Applicants' undersigned attorney.

Respectfully submitted,

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